OPERATORS MANUAL

Caution

Read this manual before operating VanGuard centrifuge

Introduction

Hamilton Bell's VanGuard Compact Centrifuge offers the protection needed in today's health care environment when operated in accordance with the instructions contained herein. The transparent polycarbonate protective cover permits visual inspection of tubes. When the cover is locked closed, the rotor is contained in a sealed compartment. With the cover locked closed the VanGuard provides integral aerosol and splash protection to minimize exposure to infectious disease. The VanGuard centrifuge should only be operated with the cover locked closed and with a balanced load.

Utility

Hamilton Bell VanGuard Centrifuge is designed to specifically for use in physician's offices and clinical laboratories. The VanGuard performs separation procedures for blood, fecal and high density sedimentation. The VanGuard is also at home in the biological, chemical and industrial laboratory where fast separation of materials of different densities is desirable.

VanGuard Centrifuge Models

All VanGuard centrifuges are available with either 10 ml or 15 ml hardened aluminum shields. Please indicate the shields you require when ordering.

V6000 VanGuard Centrifuge, on/off switch, constant speed brushless induction motor, six place rotor.

V6500 VanGuard Centrifuge, 60 minute interval timer operation, constant speed brushless induction motor, six place rotor.

NOTE: ALL VANGUARD CENTRIFUGE MODELS PERFORM AT 3400 RPM FULLY LOADED AND RELATIVE CENTRIFUGAL FORCE 1318.

Specifications

Installation Category II	Voltage	110V-AC
Pollution Degree 2	Frequency	60Hz
Indoor Use	Current	.96A
Altitude up to 2000m	Rotation frequency	3400 rpm
Temperature 5°C to 40°C	RCF	1318
Maximum relative humidity	Weight	16 lbs.
not more than 75%	Dimensions (H x W x D)	9" x 11" x 12"

Important

1. To assure product PROTECTION and RELIABILITY, repairs, maintenance and adjustments must be performed by Hamilton Bell Service Center or authorized service stations, always using Hamilton Bell replacement parts. Use only Vanguard parts.

2. Always save carton and foam packing material to be used for possible future shipment or storage of your VanGuard Centrifuge.

Site Preparation and Installation

1. Place the VanGuard Centrifuge unit on a stable, smooth, flat surface securing rubber feet to stainless steel surface. DO NOT OPERATE ON WOODED SURFACE.

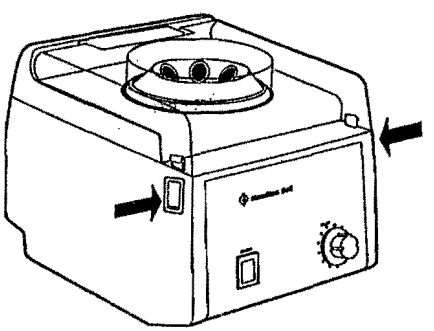
2. Plug in the VanGuard Centrifuge unit power cord. One end plugs into the receptacle on the right side of the back of the centrifuge unit. The other end (the one with the 3-prong plug) plugs into your power source (115 VAC, 60 Hz.)

Electrical Precautions

- OPERATE VANGUARD CENTRIFUGE ONLY FROM AN A.C. POWER SOURCE APPROVED FOR THE MACHINE.
- PLUG POWER CORD ONLY INTO A GROUNDED 3-WIRE RECEPTACLE.
- NEVER REMOVE THE GROUNDING PRONG FROM THE POWER PLUG.
- IMMEDIATELY REPLACE WORN OR DAMAGED POWER CORD OR PLUG.
- ALWAYS UNPLUG THE POWER CORD BEFORE CLEANING OR SERVICING THE CENTRIFUGE.

Operation

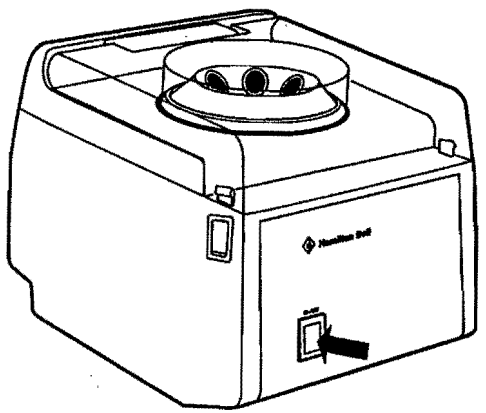
1. Simultaneously depress both detente fasteners located at the top front of each side of the centrifuge unit just below the transparent polycarbonate cover. The top cover will pop up enough to allow you to manually raise the cover to its upright resting position. See illustration.



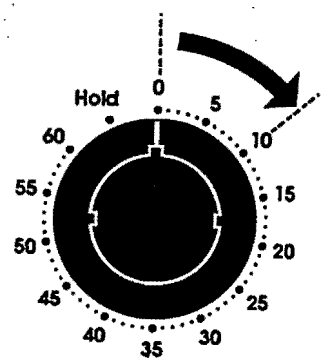
2. Load either 10 ml or 15 ml tubes (depending on how your VanGuard is configured). For your convenience, all 15 ml machines are now equipped with six 10 ml adapter cushions. Tubes and cushions must be loaded in a balanced manner. Make certain that opposite tube shields are filled with an equal sample or equivalent weight water filled tubes.

3. Close the transparent polycarbonate cover being sure that both sides of the cover are locked closed by the detente fasteners.

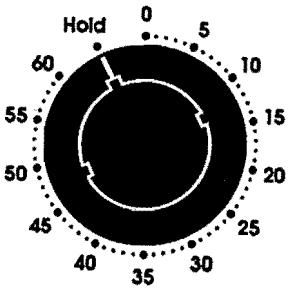
4. ON/OFF SWITCH OPERATION – Push the on/off switch on the lower left side of the front of the centrifuge unit. The on/off switch will become illuminated and the centrifuge will start operating. To STOP the centrifuge process, push the on/off switch again. See illustration.



5. 60 MINUTE TIMER OPERATION – Rotate the timer knob on the lower right side of the centrifuge unit in a clockwise direction past the 10 minute mark. Then set the timer to the desired timing interval. The indicator light on the lower left side of the centrifuge unit will become illuminated and the centrifuge will start operating. The centrifugation process will stop when the timer returns to the zero position. See illustration.



For continuous operation, rotate the timer knob counterclockwise to the HOLD mark. To stop the centrifugation process, rotate the knob clockwise to the 0 (zero) mark. See illustration.



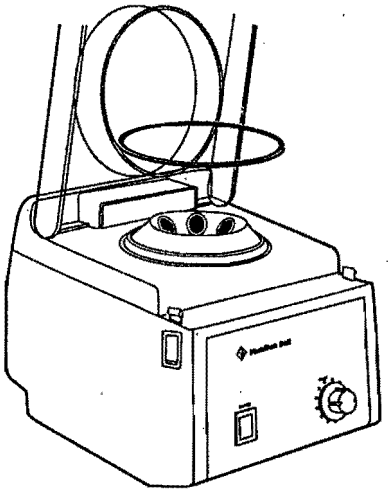
Operation Precautions

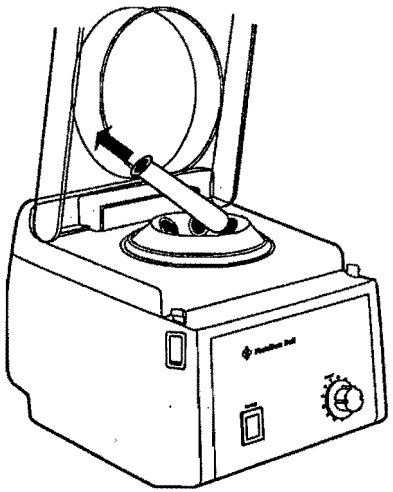
- USE ONLY VANGUARD PARTS.
- OPERATE VANGUARD CENTRIFUGE ONLY WITH TRANSPARENT POLYCARBONATE COVER LOCKED CLOSED.
- OPERATE VANGUARD CENTRIFUGE ONLY WITH BALANCED LOAD.
- OPERATE VANGUARD CENTRIFUGE ONLY WITH ROTOR COLLAR GASKET PROPERLY INSTALLED. IMMEDIATELY REPLACE WORN OR DAMAGED ROTOR COLLAR GASKET.
- NEVER UNLOCK AND/OR OPEN TRANSPARENT COVER WHILE CENTRIFUGE IS OPERATING. SHOULD YOU DO SO, POWER WILL AUTOMATICALLY SHUT OFF.
- NEVER UNLOCK AND/OR OPEN TRANSPARENT COVER BEFORE ROTOR COMES TO A COMPLETE STOP.
- NEVER UNLOCK AND/OR OPEN TRANSPARENT COVER WITHOUT VISUALLY INSPECTING TUBES FOR LEAKS OR BREAKAGE. SHOULD LEAKS OR BREAKAGE OCCUR, TAKE THE REQUIRED SAFETY PRECAUTIONS RELATIVE TO THE SITUATION BEFORE UNLOCKING THE TRANSPARENT COVER. ALWAYS WEAR APPROPRIATE PROTECTIVE GLOVES, SURGICAL MASK, CLOTHING, ETC.
- USE WITH FLAMMABLE OR EXPLOSIVE MATERIALS OR MATERIALS WHICH CHEMICALLY REACT VIGOROUSLY SHALL BE PROHIBITED.
- OPERATOR AND SERVICE PERSONNEL MUST TAKE PROPER SAFETY PRECAUTIONS (GLOVES, SURGICAL MASK, CLOTHING, ETC.) WHEN USING MATERIAL KNOWN TO BE TOXIC, RADIOACTIVE, OR CONTAMINATED WITH PATHOGENIC MICRO-ORGANISMS.
- ANY HAZARDOUS MATERIAL SPILT ON OR INSIDE CENTRIFUGE MUST BE CLEANED WITH A 5% SOLUTION OF SODIUM HYPOCHLORITE (BLEACH) AND WATER. NEVER SUBMERGE THE ENTIRE UNIT IN THE SOLUTION.
- NEVER LEAN ON CENTRIFUGE WHILE SPINNING.
- DO NOT STAY WITHIN 300mm OF CENTRIFUGE WHILE IN USE.

Maintenance

1. Frequently clean aluminum shields, rotor, interior of rotor collar, rotor collar gasket, transparent cover, and housing beneath transparent cover.

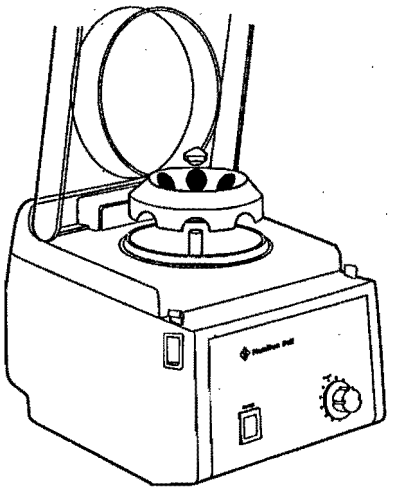
2. Rotor collar gasket is easily removable for cleaning. Always replace the rotor color gasket. NEVER OPERATE VANGUARD CENTRIFUGE WITHOUT ROTOR COLLAR GASKET PROPERLY INSTALLED. IMMEDIATELY REPLACE WORN OR DAMAGED ROTOR COLLAR GASKET. See illustration.





3. Aluminum shields are easily removable for cleaning. See illustration.

4. Clean bowl area periodically (or as needed). Remove aluminum shields, unscrew black knob counterclockwise and carefully lift the rotor off the motor shaft. Wipe the interior area of the bowl with cloth dampened with a suitable disinfectant. See illustration.



5. Clean rotor with a solution of sodium hypochlorite in concentrations of sodium hypochlorite not to exceed 5%. Rinse with warm water then dry rotor. (CAUTION: DO NOT AUTOCLAVE ROTOR.)

6. Check rotor periodically for structural integrity. REPLACE ROTOR IF WORN OR CRACKS ARE VISIBLE. Replace with V7000 rotor only. USE ONLY PART #V6175 OR #V6180 SHIELDS.

Maintenance Precautions

- ALWAYS UNPLUG THE POWER CORD BEFORE CLEANING OR SERVICING THE CENTRIFUGE.

- ALWAYS WEAR APPROPRIATE PROTECTIVE GLOVES, SURGICAL MASK, CLOTHING, ETC....USE A DISINFECTANT CAPABLE OF DESTROYING, NEUTRALIZING, OR INHIBITING THE GROWTH OF THE TYPE OF PATHOGEN MICROORGANISM THAT MAY BE PRESENT RELATIVE TO THE SITUATION. AVOID THE USE OF STRONG, ABRASIVE CLEANERS.

- WHEN REPLACING ROTOR, DO NOT OVER-TIGHTEN BLACK KNOBS.

- BEFORE USING ANY CLEANING OR DECONTAMINATION METHODS EXCEPT THOSE RECOMMENDED BY THE MANUFACTURER, USERS SHOULD CHECK WITH THE MANUFACTURER THAT THE PROPOSED METHOD WILL NOT DAMAGE THE EQUIPMENT.

Safety Features

THE VANGUARD CENTRIFUGE HAS A LID SAFETY SWITCH THAT CUTS POWER TO THE MOTOR IF THE LID IS OPENED DURING OPERATION.

THE VANGUARD CENTRIFUGE HAS A CLEAR LID FOR SAFE OBSERVATION OF SAMPLES BEING SPUN.

THE COVER CANNOT BE OPENED UNLESS BOTH DETENTE FASTENERS ARE PUSHED SIMULTANEOUSLY.

Blood Separation

For optimum performance and efficiency, refer to tube manufacturer's technical information and instructions.

VACUTAINER Brand SST Tubes

All VACUTAINER Brand SST Tubes contain a separative gel within the tube that separates the clot from the serum in whole blood specimens. Under centrifugation, the gel moves to create a barrier between clot and serum, providing access to the serum specimen for various chemistry testing procedures.

SST Brand Gel Tube Processing

To ensure the highest quality serum specimen from a whole blood sample, Becton Dickinson VACUTAINER Systems recommends the following procedure when using SST Brand Tubes:

1. **COLLECT SPECIMEN** using standard venipuncture technique, exhausting the vacuum.
2. **GENTLY INVERT TUBE 5 TIMES** to mix the clot activator with the blood.
3. **ALLOW TUBE TO CLOT 30 MINUTES** in a vertical position.
4. **SPIN TUBE FOR 15 MINUTES** (at 1,000-1,300 G's). The barrier will form, separating serum from clot.
5. **TRANSPORT** from client to lab, or processing location.

Replacement Parts and Accessories

V7000	VanGuard rotor, 6 place
V6062	VanGuard rotor collar gasket
V6120	Power Cord
V6135	Foot, suction cup
V6175	15 ml shield, hardened aluminum, with cushion
V6180	10 ml shield, hardened aluminum, with cushion
V6190	Rubber adapter used with V6175 to adapt for 10 ml tubes

Service and Information

Call: 1-800-526-0864
1-201-391-4100

Write to: Hamilton Bell Co., Inc.
VanGuard Service Department
30 Craig Road
Montvale, New Jersey 07645

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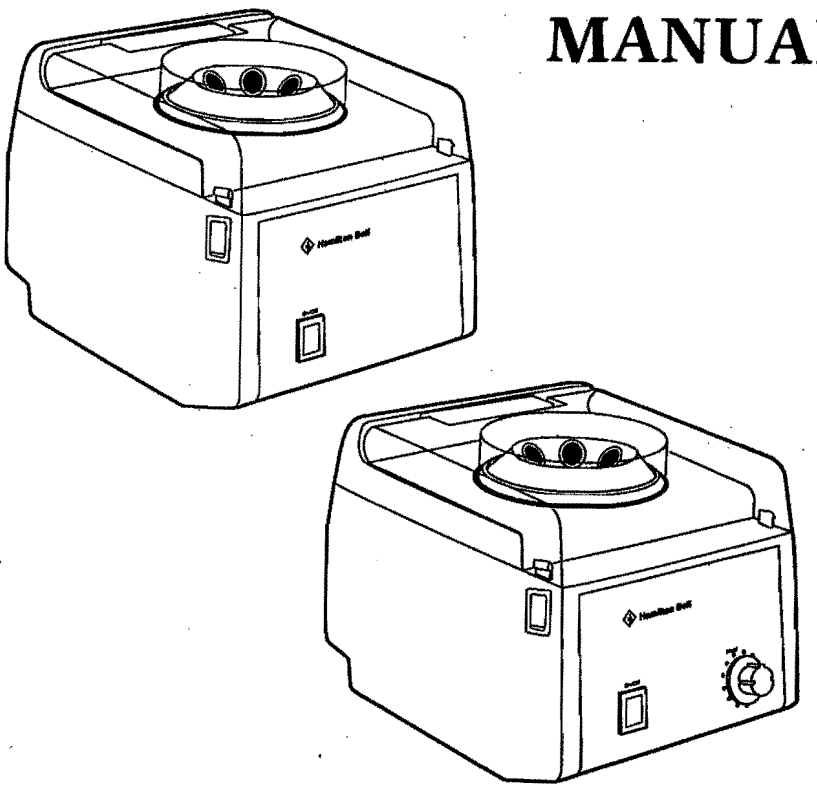

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